The Sun is an active, variable, magnetic star with oscillations on its surface and deep within its burning interior. Variations in solar activity cause changes in the space environment that affect our Solar System, life and society. Solar Terrestrial Probes are a sequence of missions designed to study these changes that scientists refer to as "space weather" and will provide a critical link for understanding the physical processes of the Sun-Earth connection.

The STP Program is part of the Sun-Earth Connection (SEC) division within the Office of Space Science

Solar Terrestrial Probes

Revealing Sun-Earth Connections

Visit Us on the Web:

Solar Terrestrial Probes Program:
http://stp.gsfc.nasa.gov

For More Information, See:

Sun-Earth Connection:
http://sec.gsfc.nasa.gov

Living With a Star:
http://lws.gsfc.nasa.gov

Solar and Heliospheric Observatory:
http://sohowww.nascom.nasa.gov

Sun-Earth Connection Education Forum:
http://sunearth.gsfc.nasa.gov/

National Aeronautics and Space Administration

Goddard Space Flight Center

NP-2002-12-519-GSFC

The STP Program offers a continuous sequence of flexible missions designed to systematically study the Sun-Earth system. The goals and objectives of the STP Program are aligned with the Sun-Earth Connection Theme Science goals and objectives.

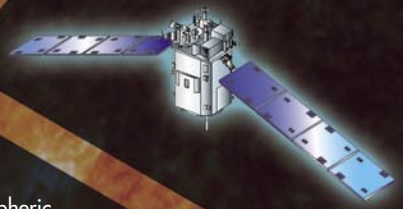
Understanding how the Sun, heliosphere, and planetary environments are connected in a single system.

Understanding the changing flow of energy and matter throughout the Sun, heliosphere and planetary environments.

Exploring the fundamental physical processes of plasma systems in the solar system.

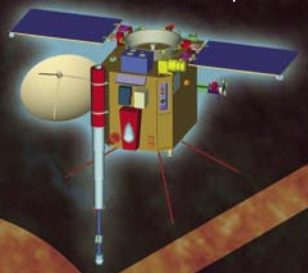
TIMED

Thermosphere, Ionosphere, Mesosphere Energetics and Dynamics (TIMED) will study the Earth's upper atmosphere and use the data as a baseline for observing global change in the Earth's energy balance.



STEREO

Solar Terrestrial Relations Observatory (STEREO) - Two spacecraft will measure solar winds and coronal mass ejections in three-dimensions and use the data to better understand solar events and space weather.



MC

Magnetospheric Constellation (MC) - 50 to 100 nanosatellites will measure the three-dimensional variations in the Earth's plasma and fields and use the data to identify how solar events affect the Earth's magnetosphere.

SOLAR-B

Solar-B will measure the Sun's magnetic field and ultraviolet/X-ray radiation and use the data to increase the understanding of the sources for variations in the Sun-Earth system.

GEC

Geospace Electrodynamic Connections (GEC) - Four spacecraft will measure particles and fields at the boundary of the magnetosphere and ionosphere and use the data to identify how energy exchange varies in space and time.

MMS

Magnetospheric MultiScale (MMS) Four spacecraft will measure the non-ideal components of the Earth's magnetospheric plasma and use the data to validate our theoretical description of plasma transport, build-up, and turbulence in the magnetosphere.